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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,617	04/29/2002	Takcharu Etoh	0020-4978P	1446
2292 7590 05/04/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER DANIELS, ANTHONY J	
			ART UNIT 2622	PAPER NUMBER
			NOTIFICATION DATE 05/04/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/089,617

Applicant(s)

ETOH, TAKEHARU

Examiner

Anthony J. Daniels

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The amendment, filed 2/5/2007, has been entered and made of record. Claims 1-5 are pending in the application.
2. The amendments to the title and specification in paragraph [0004] have overcome the examiner objection. However, the objection to claim 4 has not been overcome. On line 4 of the newly submitted claims, “an” has not been omitted.

Claim Objections

1. Claim 4 is objected to because of the following informalities: On line 4 of the claim, “an” should be omitted. Appropriate correction is required.

Response to Arguments

1. Applicant's arguments with respect to claims 4 and 5 have been considered but are moot in view of the new ground(s) of rejection.

In regard to claim 4, applicant's arguments are directed toward the “replaceably attached” language of the previous claim. However, the examiner submits that “removably attached” is a different from “replaceably attached” and; thus, the scope of the claim has been changed.

Claim Rejections - 35 USC § 112

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to claim 1, the "image capturing area" according to the specification is a variable one. More specifically, the image capturing area changes according to the number of defective blocks. The claim does not recite this feature and; thus, contradicts itself. An image capturing area, consisting of four blocks as seen in Figure 9, has a center, which is evident from viewing Figure 9. However, when the position adjustment mechanism shifts the relative position between the optical system and the image sensor by $\frac{1}{2}$ of one or both of a longitudinal and lateral area, the center of the image capturing area changes to one, which can be seen in Figure 10. In this respect, the image capturing area is not distinctly defined.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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1. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (US # 5,436,661) in view of Miyaguchi et al. (US # 5,508,740) in view of Kimura (US # 5,051,798) and further in view of Huot et al. (US # 5,731,834).

As to claim 4, Yamamoto et al. teaches an image capturing apparatus (Figure 5) comprising: an image sensor provided with a chip having an image capturing area (Figure 5, CCD "23G-2"), said image capturing area including a plurality of blocks (*The examiner interprets a block as a pixel of the image sensor.*), each of the block having an image information read-out line (*It is inherent that a information readout line exist to read out the photo-electrically converted charge.*); an optical system for focusing incident light from an object to be captured on the image capturing area of the image sensor (Figure 5, lens "20"); an image sensor mount section to which the sensor is attached, wherein a plurality of CCDs are provided (Figure 5), one of the which is provided so that a center of whole of the blocks constituting the image capturing area coincides with an optical axis of the incident light (Figure 5, CCD "23G-1"; *{Incoming light strikes the entire sensor, including the center of whole of all the blocks (pixels). Thus an optical axis would be incident at this point.}*), and another so that a center of at least one of the blocks constituting the image capturing area coincides with an optical axis of the incident light (Figure 5, CCD "23G-2"; Col. 7, Lines 48-52; *{An optical axis is incident with the center of all of the blocks (pixels). Otherwise, the pixels would not receive light, thus not produce charge corresponding to the amount of light.}*). The claim differs from Yamamoto et al. in that it further requires that image sensor chip is attached to a package and that more than one information readout line is provided for each block. The claim also differs from Yamamoto et al. in that it further requires that the CCD be removably attached to the mount.

In the same field of endeavor, Miyaguchi et al. teaches an image sensor package to which a CCD chip is attached. The package includes a cooling device so to control the temperature of the image sensor (Col. 1, Lines 43-49). In light of the teaching of Miyaguchi et al., it would have been obvious to provide the package of Miyaguchi et al. for the color image sensors of Yamamoto et al., because an artisan of ordinary skill in the art would recognize that this would allow photodetection with high S/N ratio (see Miyaguchi et al., Col. 1, Lines 35-37).

In the same field of endeavor, Kimura teaches a CCD image sensor. The image sensor includes a plurality of pixels. Each pixel has two information readout lines. One line is used to readout charges for image formation. The other purges charges to an overflow drain (Figure 2). In light of the teaching of Kimura, it would have been obvious to one of ordinary skill in the art to include the purging technique in Kimura for the pixels of the CCDs of Yamamoto et al., because an artisan of ordinary skill in the art would recognize that this would eliminate undue light from contributing to the overall image.

In the same field of endeavor, Huot et al. teaches a CCD array assembly comprising a mount to which the CCD is removably attached (see Huot et al., Col. 1, Line 66 – Col. 2, Line 4). In light of the teaching of Huot et al., it would have been obvious to one of ordinary skill in the art to allow the CCD in the system of Yamamoto et al., as modified by Miyaguchi et al. and Kimura, to be removably attached, because an artisan of ordinary skill in the art would recognize that this would allow replacement of a failed CCD without additional alignment (see Huot et al., Col. 2, Lines 4-7)

Remarks about the rejection of claim 4: *In the claim, the distinction between the packages is the position of the image sensor in the package. Accordingly, Two identical packages could be*

considered two different if the chips in each are positioned in a certain locations relative to the optical axis. This is the basis of the rejection above. There exists a half a pixel pitch between the two green color sensing CCDs. Thus providing the same package (the package of Miyaguchi et al.) on the two differently spaced CCDs of Yamamoto et al. defines two different packages.

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (US # 5,811,799) in view of Kimura (US # 5,051,798).

As to claim 5, Wu teaches an image sensor comprising a chip (Figure 9B), wherein an image capturing area of the chip comprises a plurality of blocks (Figure 9B; blocks "50"), and voltage supply wires for controlling circuitry in each block (*Voltage supply wires are inherent in image sensor chips*) is provided in a region along a first of at least one of two demarcation lines between the blocks (Figure 9B, vertical and horizontal dicing lines "200"), wherein the second of at least two demarcation lines is void of circuitry and wires allowing the chip to be cuttable along the second demarcation line without affecting operability of the image sensors (Figure 9B, vertical dicing line "200"). The claim differs from Wu in that it further requires that the each block have a plurality of image information readout lines.

In the same field of endeavor, Kimura teaches a CCD image sensor. The image sensor includes a plurality of pixels. Each pixel has two information readout lines. One line is used to readout charges for image formation. The other purges charges to an overflow drain (Figure 2). In light of the teaching of Kimura, it would have been obvious to one of ordinary skill in the art to include the purging technique in Kimura for the pixels of the image sensors of Wu, because an

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artisan of ordinary skill in the art would recognize that this would eliminate undue light from contributing to the overall image.

Conclusion

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

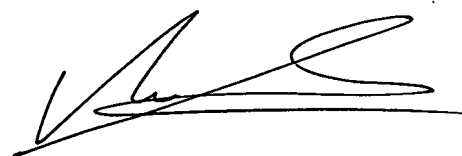
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J. Daniels whose telephone number is (571) 272-7362. The examiner can normally be reached on 8:00 A.M. - 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AD
4/27/2007



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